**Safety Data Sheet: Signal Tech R&O Turbine 220**

**Revision Date: January 2nd 2022**

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| SECTION 1                                              PRODUCT AND COMPANY IDENTIFICATION |

**PRODUCT**

 **Product Name:** Signal Tech R&O Turbine 220

 **Product Description:** Synthetic base stocks and additives

 **Intended Use:** Gear Oil

**COMPANY IDENTIFICATION**

 **Supplier:** Beacon Lubricants

 P.O Box 754

 Edinboro, PA 16412

**Emergency Telephone:** 1-877-734-7334 – Beacon Lubricants, Inc.
**Emergency Telephone:** 1-800-424-9300 (24 hours) – Chemtrec approval

**Website:** www.beaconlubricants.com

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| SECTION 2                                                HAZARDS IDENTIFICATION  |

This material is not hazardous according to regulatory guidelines (M)SDS Section 15)

**Other hazard information:**

**HAZARD NOT OTHERWISE CLASSIFIED (HNOC):**None as defined under 29 CFR 1900. 1200.

**PHYSICAL / CHEMICAL HAZARDS**
No significant hazards.
**HEALTH HAZARDS**
High-pressure injection under skin may cause serious damage. Excessive exposure may result in eye, skin, or respiratory irritation.

**ENVIRONMENTAL HAZARDS**
No significant hazards.

**NFPA Hazard ID:** Health:    0 Flammability:     1 Reactivity:     0
**HMIS Hazard  ID:** Health:   0 Flammability:     1 Reactivity:     0

**Note:**  This material should not be used for any other purpose than the indented use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

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| SECTION 3                                      COMPOSITION / INFORMATION ON INGREDIENTS |

This material is defined as a mixture.
**Hazardous Substance(s) or Complex Substance(s) required for disclosure**

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| --- | --- | --- | --- |
| **Name** | **CAS#** | **Concentration\*** | **GHS HAZARD CODES** |
| TRIPHENYL PHOSPHOROTHIONATE | 597-82-0 | 0.1 - < 1% | H361(D), H361(F), H402, H412 |

\*All Concentrations are percent by weight unless material is a gas. Gas concentrationare in the percent by volume.

As per paragraph (i) of 29 CFR 1910.1200, formulation is a considered a trade secret and specific chemical identity and exact percentage (concentration) of composition may have been withheld. Specific chemical identity and exact percentage composition will be provided to health professionals, employees, or designated representatives in accordance with applicable provisions of paragraph (i).

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| SECTION 4                                                FIRST AID MEASURES |

 **INHALATION**
Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

**SKIN CONTACT**
Wash contact areas with soap and water. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms form high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extend of injury.

**EYE CONTACT**
Flush thoroughly with water. If irritation occurs, get medical assistance.

**INGESTION**
First aid is normally not required. Seek medical attention if discomfort occurs.

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| SECTION 5                                                     FIRE FIGHTING MEASURES  |

 **EXTINGUISHING MEDIA
Appropriate Extinguishing Media:** Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

**Inappropriate Extinguishing Media:** Straight streams of water

**FIRE FIGHTING**
**Fire Fighting Instructions:** Evacuate area. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply.  Fire-fighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

**Hazardous Combustion Products:** Smoke, Fume, Oxides of carbon, Incomplete combustion products, Aldehydes.

**FLAMMABILITY PROPERTIES**
**Flash Point [Method]:** >226°C (439°F) [ASTM D-92]
**Flammable Limits (Approximate volume % in air)**: LEL: 0.9 UEL: 7.0
**Autoignition Temperature:** N/D

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| SECTION 6                                                           ACCIDENTAL RELEASE MEASURES  |

 **NOTIFICATION PROCEDURES**
In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.

**PROTECTIVE MEASURES**
Avoid contact with spilled material. See Section 5 for firefighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgement of the emergency responders.

**SPILL MANAGEMENT**
**Land Spill:** Stop leak if you can do it without risk. Recover by pumping or with suitable absorbent.

**Water Spill:**  Stop leak if you can do it without risk. Confine the spill immediately with booms. Warn other shipping. Remove from the surface by skimming or with suitable absorbents. Seek the advice of specialist before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

**ENVIRONMENTAL PRECAUTIONS**
Large Spills: Dik far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

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| SECTION 7                                                HANDLING AND STORAGE  |

 **HANDLING**

Prevent small spills and leakage to avoid slip hazards. Material can accumulate static charges which may cause an electrical spark (ignition source). When the material is handled in bulk, an electoral spark could ignite any flammable vapors from liquids or residues that may be present (e.g., during switch-loading operations). Use proper bonding and/or ground procedures. However, bonding and grounds may not eliminate the hazard from static accumulation. Consult local applicable standards for guidance. Additional references include American Petroleum Institute 2003 (Protection Against Ignition Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practice on Static Electricity) or CENELEC CLC/TR 50404 (Electrostatics – Code of practice for the avoidance of hazards dude to static electricity).

**Static Accumulator:** This material is a static accumulator.

**STORAGE:**
The container choice, for example storage vessel, may effect static accumulation and dissipation. Do not store in open or unlabeled containers.

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| SECTION 8                                        EXPOSURE CONTROLS / PERSONAL PROTECTION |

**Exposure limits/standards for material that can be formed when handling this product:** When mists/aerosols can occur the following are recommended: 5 mg/3 – ACGIH TLV (inhalable fraction), 5 mg/m3 – OSHA PEL

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

No biological limits allocated.

**ENGINEERING CONTROLS**

The level of protection and toes of controls necessary will vary depending upon potential exposure conditions.
Control measures to consider: No special requirements under ordinary conditions of use and with adequate ventilation.

**PERSONAL PROTECTION**

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information of the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

**Respiratory Protection:**  If engineering controls do not maintain airborne contaminant concentrations at a levee which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:
No protection is ordinarily required under normal conditions of use and with adequate ventilation.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filters capacity/rating may be exceeded.

**Hand Protection:**Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacture for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:
If prolonged or repeated contact is likely, chemical resistant gloves are recommended. If contact with forearms is likely, wear gauntlet style gloves.

**Eye Protection:**If contact is likely, safety glasses with side shields are recommended.

**Skin and Body Protection:** Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include: If prolonged or repeated contact is likely, chemical, and oil resistant clothing is recommended.

**Specific Hygiene Measures:** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

**Environmental Controls**
Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

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| SECTION 9                                                PHYSICAL AND CHEMICAL PROPERTIES |

 **Note:** Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

**GENERAL INFORMATION**

**Physical State:** Liquid

**Color:** Pale Yellow

**Odor:** Characteristic

**Odor Threshold:** N/D

**IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION**

**Relative Density (at 15 °C):** .0857

**Flammability (Solid, Gas):** N/A

**Flash Point [Method]** >226°C (439°F) [ASTM D-92]

**Flammable Limits** **(Approximate volume % in air):** LEL: 0.9 UEL: 7.0

**Auto ignition Temperature:** N/D

**Vapor Density (Air =1):** > 2 at kPa [estimated]

**Vapor Pressure:** < 0.013 kPa (0.1 mm Hg) at 20°C

**Evaporation Rate (n-butyl acetate** = 1): N/D

**pH:** N/A

**Log Pow (n-Octanol/Water Partition Coefficient):** > 3.5 [estimated]

**Solubility in Water:** Negligible

**Viscosity:** >220 cSt (220 mm2/sec) at 40 °C | 24.5 cSt (24.5 mm2/sec) at 100°C

**Oxidizing Properties:** See Hazards Identification Section.

**OTHER INFORMATION**

**Freezing Point:** N/D

**Melting Point:** N/D

**Pour Point:** -18° (0°F)

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| SECTION 10                                                STABILITY AND REACTIVITY  |

 **REACTIVITY:** See sub-sections below.

**STABILITY:** Material is stable under normal conditions

**CONDITIONS TO AVOID:** High energy sources of ignition.

**MATERIALS TO AVOID:** Strong oxidizers, strong acids

**HAZARDOUS DECOMPOSITION PRODUCTS:** Material does not decompose at ambient temperatures.

**POSSIBILITY OF HAZARDOUS REACTIONS:** Hazardous polymerization will not occur.

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| SECTION 11                                                   TOXICOLOGICAL INFORMATION |

 **INFORMATION ON TOXICOLOGICAL EFFECTS**

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| **Hazard Class** | **Conclusion / Remarks** |
| **Inhalation** |   |
| Acute Toxicity: No end point data for material. | Minimally Toxic. Based on the assessment of the components. |
| Irritation: No end point data for material. | Negligible hazard at ambient/normal handling temperatures. |
| **Ingestion** |   |
| Acute Toxicity: No end point data for material | Minimally Toxic. Based on assessment of components.  |
| **Skin** |   |
| Acute Toxicity: No end point data for material | Minimally Toxic. Based on assessment of components. |
| Skin Corrosion/Irritation: No end point data for material. | Negligible irritation to skin at ambient temperatures. Based on assessment of the components. |
| **Eye** |   |
| Serious Eye Damage/Irritation: No end point data for material | May cause mild, short-lasting discomfort to eyes. Based on assessment of components. |
| **Sensitization** |   |
| Respiratory Sensitization: No end point data for material | Not expected to be a respiratory sensitizer |
| Skin Sensitization: No end point date for material | Not expected to be a skin sensitizer. Based on assessment of the components. |
| **Aspiration:** Date available | Not expected to be an aspiration hazard. Based on phsico-chemical properties of the materials. |
| **Germ Cell Mutagenicity:** No end point data for material | Not expected to be a germ cell mutagen. Based on assessment of the components. |
| **Carcinogenicity:** No end point data for material | Not expected to cause cancer. Based on assessment of the components. |
| **Reproductive Toxicity:** No end point data for material | Not expected to be a reproductive toxicant. Based on the assessment of the components |
| **Lactation:** No end point data for material | Not expected to cause harm to breast-fed children |
| **Specific Target Organ Toxicity (STOT)** |   |
| Single Exposure: No end point data for material | Not expected to cause organ damage from a single exposure |
| Repeated Exposure: No end point data for material | Not expected to cause organ damage from prolonged or repeated exposure. Based on assessment of the components. |

**OTHER INFORMATION**

**For the product itself:**Repeated and/or prolonged exposure may cause irritation to the skin, eyes, or respiratory tract.

**Contains:**

Synthetic base oils: Not expected to cause significant health effects under conditions of normal use, based on laboratory studies with the same or similar materials. Not mutagenic or genotoxic. Not sensitizing in test animals and humans. Aryl thiophosphate: Effects on the liver, adrenals, thyroid, blood and reproductive organs were seen in rats after repeated oral gavage at high doses. In a reproduction/developmental toxicity screening study, repeated oral gavage of rats with the aryl thiophosphate at high doses that produced maternal toxicity resulted in littler loss, decreased number of implantation sites and decreased number of live pups. However, when the aryl thiophosphate was tested in a subsequent, identical reproduction/developmental screening study in rats at a concentration higher than in this lubricant product, there were no reproductive/developmental effects or maternal toxicity.

**The following ingredients are cited on the lists below: None.**

--REGULATORY LISTS SEARCHED--
1 = NTP CARC 3 = IARC 1 5 = IARC 2B
2 = NTP SUS 4 = IARC 2A 6 = OSHA CARC

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| SECTION 12                                                ECOLOGICAL INFORMATION  |

The information given is based on data available for the material, the components of the material, and similar materials.

**ECOTOXICITY**
Material — Not expected to be harmful to aquatic organisms.

**MOBILITY**

Base oil component—Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

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| SECTION 13                                                 DISPOSAL CONSIDERATIONS |

Disposal recommendations based on material as supplied. Disposal must be in accordance current applicable laws and regulations, and material characteristics at time of disposal.

**DISPOSAL RECOMMENDATIONS**
Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products. Protect the environment. Dispose of used oil at designated sites Minimize skin contact. DO not mix used oils with solvents, brake fluids or coolants.

**REGULATORY DISPOSAL INFORMATION**
RCRA Information: Disposal of unused product may be subject to RCRA regulations (40 CFR 261). Disposal of the used product may be also regulated due to ignitability, corrosivity, reactivity or toxicity as determined by the Toxicity Characteristic Leaching Procedure (TCLP). Potential RCRA characteristics: IGNITABILITY.

**Empty Container Warning:** Empty Container Warning (where applicable): Empty containers may contain reside and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJUST OR DEATH.

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| SECTION 14                                                TRANSPORT INFORMATION  |

**LAND (TDG):** Not Regulated for Land Transport

**SEA (IMDG):** Not Regulated for Sea Transport according to IMDG-Code

**Marine Pollutant:** No

**AIR (IATA):** Not Regulated for Air Transport

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| SECTION 15                                                    REGULATORY INFORMATION |

**OSHA HAZARD COMMUNICATION STANDARD:** This material is considered hazardous in accordance with OHSA HazCom 2012, 29, CFR 1910. 1200.

**Complies with the following national/regional chemical inventory requirements:** AICS, DSL, ENCS, IECSC, KECI, PICCS, TSCA

 **Special Cases:**

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| Inventory | Status |
| ENCS  | Restrictions Apply |

EPCRA Section 302: This material contains no extremely hazardous substances.

**SARA (311/312) REPORTABLE HAZARD CATEGORIES:** None

**SARA (313) TOXIC RELEASE INVENTORY:** This material contains no chemicals subject to the supplier notification requirements of the SARA 313 Toxic Release Program.

**The following ingredients are cited on the lists below: None**

--REGULATORY LISTS SEARCHED—

1 = ACGIH ALL 6 = TSCA 5a2 11 = CA P65 REPRO 16 = MN RTK
2 = ACGIH A1 7 = TSCA 5e 12 = CA RTK 17 = NJ RTK
3 = ACGIH A2 8 = TSCA 6 13 = IL RTK 18 = PA RTK
4 = OSHA Z 9 = TSCA 12b 14 = LA RTK 19 = RI RTK
5 = TSCA 4 10 = CA P6 CARC 15 = MI 293

Code Key: CARC=Carcinogen; REPRO=Reproductive

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| SECTION 16                                                        OTHER INFORMATION |

N/D = Not determined, N/A = Not applicable

**KEY TO THE H-CODES CONTAINED IN SECTION 3 OF THIS DOCUMENT (for information only):**

H361(D): Suspected of damaging the unborn child; Repro Tox, Cat 2 (Develop)

H361(F): Suspected of damaging fertility; Repro Tox, Cat 2 (Fertility)

H402: Harmful to aquatic life; Acute Env Tox, Cat 3

H412: Harmful to aquatic life with long lasting effects; Chronic Env Tox, Cat 3

**THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:**
Updates made in accordance with implementations of GHS requirements.
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